

**Listing of Claims:**

This listing of claims will replace the listing of claims in the application.

1. (original) A method for producing a probe carrier comprising:

5           (1)     a step of preparing a purified probe;

          (2)     a step of obtaining probe information on the purified probe;

          (3)     a step of judging "good" or "not good" quality of each purified probe  
          according to the obtained probe information and a predetermined criterion;

          (4)     a step of obtaining a probe of which quality is "good" in case of the  
10     purified probe of which quality is judged as "not good";

          (5)     a step of individually dissolving each purified probe judged as  
          "good" in a solvent for ejection to a carrier, based on at least a part of the probe  
          information obtained in (2), at a predetermined concentration and storing each  
          obtained probe solution in an individual storing container;

15           (6)     a step of transferring each probe solution stored in said storing  
          container to another container equipped in an apparatus for deposition onto the  
          carrier;

          (7)     a step of applying a surface treatment to the carrier for fixing the  
          probe;

20           (8)     a step of depositing said probe solution onto a treated surface of  
          said carrier by a method including following steps, thereby forming a plurality of  
          mutually independent probe fixation areas;

          (8-1)    a step of executing an analytical inspection on the carrier  
          subjected to said surface treatment and judging "good" or "not

good” state of said carrier according to the result of said analytical inspection and a predetermined criterion;

(8-2) a step of depositing at least one selected from said plural probe solutions onto the carrier judged as “good” so as to form a probe deposition area independent for each probe solution;

(8-3) a step of executing an inspection, concerning a formed state of the probe deposition area, on the carrier on which said probe deposition area is formed, and judging “good” or “not good” state of said deposition according the result of said inspection and a predetermined criterion;

(8-4) a step of executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier;

(8-5) a step of executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on said carrier; and

(8-6) a step of judging “good” or “not good” state of the produced probe carrier according to the result of said analytical inspection and a predetermined criterion.

2. (original) A method for producing a probe carrier comprising:

(a) a step of designing plural kinds of probes for detecting a target substance;

(b) a step of synthesizing the designed plural probes;

(c) a step of individually purifying the synthesized plural probes;

- (d) a step of obtaining probe information on each purified probe;
- (e) a step of judging "good" or "not good" state of synthesis and purification in each purified probe according to the obtained probe information and a predetermined criterion;
- 5 (f) a step of repeating the foregoing steps (b) to (e) on the purified probe of which state of synthesis and purification is judged as "not good", thereby obtaining "good" state of synthesis and purification in all the purified probes;
- (g) a step of individually dissolving each purified probe judged as  
10 "good" in a solvent for ejection to a carrier, based on at least a part of the probe information obtained in (d), in a predetermined concentration and storing each obtained probe solution in an individual storing container;
- (h) a step of transferring each probe solution stored in the storing container to another container equipped in an apparatus for deposition onto the  
15 carrier;
- (i) a step of applying a surface treatment for fixing the probe to the carrier;
- (j) a step of depositing the probe solution onto a treated surface of the carrier by a method including following steps, thereby forming a plurality of  
20 mutually independent probe fixation areas;
- (j-1) a step of executing an analytical inspection on the carrier for judging "good" or "not good" state of the carrier according to the result of the analytical inspection and a predetermined criterion;

(j-2) a step of depositing at least one selected from plural probe solutions onto the carrier judged as "good" so as to form a probe deposition area independent for each probe solution;

(j-3) a step of executing an inspection, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed, and judging "good" or "not good" state of the deposition according the result of the inspection and a predetermined criterion;

(j-4) a step of executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier;

(j-5) a step of executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier; and

(j-6) a step of judging "good" or "not good" state of the produced probe carrier according to the result of the analytical inspection and a predetermined criterion.

3. (original) A producing method according to claim 1, wherein the probe is a nucleic acid.

4. (original) A producing method according to claim 1, wherein the probe information is a weight of said probe.

5. (original) A producing method according to claim 1, wherein the probe information is a purity of said probe.

6. (original) A producing method according to claim 1, wherein the  
5 probe information is base sequence information of a nucleic acid.

7. (original) A producing method according to claim 1, wherein a fixation of the probe to the carrier is executed by a covalent bonding.

10 8. (original) A producing method according to claim 1, wherein means for spotting the probe is an apparatus equipped with single or plural ink jet nozzles.

9. (currently amended) A producing system to be employed in a method for producing a probe carrier according to ~~any one of claims 1 to 8~~ claim 1,  
15 comprising:

an analysis apparatus for obtaining the probe information of each purified probe;

an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe;

20 an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as "good";

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging "good" or "not good" state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

an apparatus for executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

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10. currently amended) A producing system to be employed in a method for producing a probe carrier according to ~~any one of claims 1 to 8~~ claim 1, comprising:

a synthesis apparatus for synthesizing plural designed probes;

15 a purification apparatus for individually purifying the synthesized plural probes;

an analysis apparatus for obtaining the probe information of each purified probe;

20 an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as "good";

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging "good" or "not good" state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

an apparatus for executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

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11. (currently amended) A quality assurance method for a probe carrier, wherein a producing method according to ~~any one of claims 1 to 8 or a producing system according to claim 9 or 10~~ claim 1 is employed to execute an analytical inspection on any one or all of a probe in a probe solution prior to the deposition onto a carrier, a surface treated carrier, a probe deposition area after the deposition of a probe solution, and a probe fixed to a carrier after the deposition of a probe solution, thereby assuring a quality of a probe chip.

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12. (currently amended) A quality assurance method according to claim 11, wherein the probe chip is a probe carrier produced by ~~a producing method according to any one of claims 1 to 8 or by a producing system according to claim 9 or 10~~

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- (1) a step of preparing a purified probe;
- (2) a step of obtaining probe information on the purified probe;
- (3) a step of judging "good" or "not good" quality of each purified probe

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(4) a step of obtaining a probe of which quality is "good" in case of the purified probe of which quality is judged as "not good";

(5) a step of individually dissolving each purified probe judged as "good" in a solvent for ejection to a carrier, based on at least a part of the probe information obtained in (2), at a predetermined concentration and storing each  
5 obtained probe solution in an individual storing container;

(6) a step of transferring each probe solution stored in said storing container to another container equipped in an apparatus for deposition onto the carrier;

10 (7) a step of applying a surface treatment to the carrier for fixing the probe;

(8) a step of depositing said probe solution onto a treated surface of said carrier by a method including following steps, thereby forming a plurality of mutually independent probe fixation areas;

15 (8-1) a step of executing an analytical inspection on the carrier subjected to said surface treatment and judging "good" or "not good" state of said carrier according to the result of said analytical inspection and a predetermined criterion;

(8-2) a step of depositing at least one selected from said plural probe solutions onto the carrier judged as "good" so as to form a  
20 probe deposition area independent for each probe solution;

(8-3) a step of executing an inspection, concerning a formed state of the probe deposition area, on the carrier on which said probe deposition area is formed, and judging "good" or "not good" state of



said deposition according the result of said inspection and a predetermined criterion;

(8-4) a step of executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier;

(8-5) a step of executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on said carrier; and

(8-6) a step of judging "good" or "not good" state of the produced probe carrier according to the result of said analytical inspection and a predetermined criterion.

13. (currently amended) A probe carrier produced by a producing method according to ~~any one of claims 1 to 8 or by a producing system~~ according to ~~claim 9 or 10~~ claim 1.

14. (original) A probe carrier of which quality is assured by a quality assurance method according to claim 11.

15. (currently amended) A method for producing a probe carrier having plural probes fixed on a surface of a carrier, comprising:  
(8-1) a step of executing an analytical inspection on a surface of said carrier and judging "good" or "not good" state of said carrier according to the result of said analytical inspection and a predetermined criterion;

(8-2) a step of depositing at least one selected from plural probe solutions onto said carrier judged as “good” so as to form a probe deposition area independent for each probe solution;

(8-3) a step of executing an inspection, concerning a formed state of said probe deposition area, on the carrier on which said probe deposition area is formed, and judging “good” or “not good” state of said deposition according the result of said inspection and a predetermined criterion;

(8-4) a step of executing, on the carrier having said probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier;

(8-5) a step of executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on said carrier; and

(8-6) a step of judging “good” or “not good” state of the produced probe carrier according to the result of said analytical inspection and a predetermined criterion.

16. (new) A producing system to be employed in a method for producing a probe carrier according to claim 2, comprising:

an analysis apparatus for obtaining the probe information of each purified probe;

an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”;

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging "good" or "not good" state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

5 an apparatus for executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the  
10 carrier.

17. (new) A producing system to be employed in a method for producing a probe carrier according to claim 3, comprising:

an analysis apparatus for obtaining the probe information of each purified  
15 probe;

an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged  
20 as "good";

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging "good" or "not good" state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at  
5 least one of the plural probe fixation areas constituted of probes fixed on the carrier.

18. (new) A producing system to be employed in a method for producing a probe carrier according to claim 4, comprising:

10 an analysis apparatus for obtaining the probe information of each purified probe;

an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied  
15 from a storing container individually storing each purified probe solution judged as “good”;

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe  
20 deposition area is formed;

an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

5           19. (new) A producing system to be employed in a method for producing a probe carrier according to claim 5, comprising:

an analysis apparatus for obtaining the probe information of each purified probe;

10           an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as "good";

an analysis apparatus for the carrier subjected to said surface treatment;

15           an inspection apparatus for judging "good" or "not good" state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

20           an apparatus for executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

20. (new) A producing system to be employed in a method for producing a probe carrier according to claim 6, comprising:

an analysis apparatus for obtaining the probe information of each purified probe;

5        an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as "good";

10        an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging "good" or "not good" state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

15        an apparatus for executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

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21. (new) A producing system to be employed in a method for producing a probe carrier according to claim 7, comprising:

an analysis apparatus for obtaining the probe information of each purified probe;

an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged  
5 as "good";

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging "good" or "not good" state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

10 an apparatus for executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the  
15 carrier.

22. (new) A producing system to be employed in a method for producing a probe carrier according to claim 8, comprising:

an analysis apparatus for obtaining the probe information of each purified  
20 probe;

an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged  
25 as "good";

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging "good" or "not good" state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

5 an apparatus for executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the  
10 carrier.

23. (new) A producing system to be employed in a method for producing a probe carrier according to claim 2, comprising:

a synthesis apparatus for synthesizing plural designed probes;

15 a purification apparatus for individually purifying the synthesized plural probes;

an analysis apparatus for obtaining the probe information of each purified probe;

an inspection apparatus for judging "good" or "not good" state of synthesis  
20 and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as "good";

an analysis apparatus for the carrier subjected to said surface treatment;



an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

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24. (new) A producing system to be employed in a method for producing a probe carrier according to claim 3, comprising:

a synthesis apparatus for synthesizing plural designed probes;

a purification apparatus for individually purifying the synthesized plural probes;

an analysis apparatus for obtaining the probe information of each purified probe;

an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”;

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

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25. (new) A producing system to be employed in a method for producing a probe carrier according to claim 4, comprising:

a synthesis apparatus for synthesizing plural designed probes;

a purification apparatus for individually purifying the synthesized plural probes;

an analysis apparatus for obtaining the probe information of each purified probe;

an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”;

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

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26. (new) A producing system to be employed in a method for producing a probe carrier according to claim 5, comprising:

a synthesis apparatus for synthesizing plural designed probes;

a purification apparatus for individually purifying the synthesized plural probes;

an analysis apparatus for obtaining the probe information of each purified probe;

an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”;

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

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27. (new) A producing system to be employed in a method for producing a probe carrier according to claim 6, comprising:

a synthesis apparatus for synthesizing plural designed probes;

a purification apparatus for individually purifying the synthesized plural probes;

an analysis apparatus for obtaining the probe information of each purified probe;

an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”;

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

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28. (new) A producing system to be employed in a method for producing a probe carrier according to claim 7, comprising:

a synthesis apparatus for synthesizing plural designed probes;

a purification apparatus for individually purifying the synthesized plural probes;

an analysis apparatus for obtaining the probe information of each purified probe;

an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”;

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

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29. (new) A producing system to be employed in a method for producing a probe carrier according to claim 8, comprising:

a synthesis apparatus for synthesizing plural designed probes;

a purification apparatus for individually purifying the synthesized plural probes;

an analysis apparatus for obtaining the probe information of each purified probe;

an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”;

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging "good" or "not good" state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

an apparatus for executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

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30. (new) A quality assurance method for a probe carrier, wherein a producing method according to claim 2 is employed to execute an analytical inspection on any one or all of a probe in a probe solution prior to the deposition onto a carrier, a surface treated carrier, a probe deposition area after the deposition of a probe solution, and a probe fixed to a carrier after the deposition of a probe solution, thereby assuring a quality of a probe chip.

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31. (new) A quality assurance method for a probe carrier, wherein a producing method according to claim 3 is employed to execute an analytical inspection on any one or all of a probe in a probe solution prior to the deposition onto a carrier, a surface treated carrier, a probe deposition area after the deposition of a probe solution, and a probe fixed to a carrier after the deposition of a probe solution, thereby assuring a quality of a probe chip.

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32. (new) A quality assurance method for a probe carrier, wherein a producing method according to claim 4 is employed to execute an analytical inspection on any one or all of a probe in a probe solution prior to the deposition onto a carrier, a surface treated carrier, a probe deposition area after the  
5 deposition of a probe solution, and a probe fixed to a carrier after the deposition of a probe solution, thereby assuring a quality of a probe chip.

33. (new) A quality assurance method for a probe carrier, wherein a producing method according to claim 5 is employed to execute an analytical  
10 inspection on any one or all of a probe in a probe solution prior to the deposition onto a carrier, a surface treated carrier, a probe deposition area after the deposition of a probe solution, and a probe fixed to a carrier after the deposition of a probe solution, thereby assuring a quality of a probe chip.

15 34. (new) A quality assurance method for a probe carrier, wherein a producing method according claim 6 is employed to execute an analytical inspection on any one or all of a probe in a probe solution prior to the deposition onto a carrier, a surface treated carrier, a probe deposition area after the deposition of a probe solution, and a probe fixed to a carrier after the deposition  
20 of a probe solution, thereby assuring a quality of a probe chip.

35. (new) A quality assurance method for a probe carrier, wherein a producing method according to claim 7 is employed to execute an analytical inspection on any one or all of a probe in a probe solution prior to the deposition  
25 onto a carrier, a surface treated carrier, a probe deposition area after the



deposition of a probe solution, and a probe fixed to a carrier after the deposition of a probe solution, thereby assuring a quality of a probe chip.

36. (new) A quality assurance method for a probe carrier, wherein a  
5 producing method according to claim 8 is employed to execute an analytical inspection on any one or all of a probe in a probe solution prior to the deposition onto a carrier, a surface treated carrier, a probe deposition area after the deposition of a probe solution, and a probe fixed to a carrier after the deposition of a probe solution, thereby assuring a quality of a probe chip.

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37. (new) A quality assurance method for a probe carrier, wherein a  
producing system according to claim 9 is employed to execute an analytical inspection on any one or all of a probe in a probe solution prior to the deposition onto a carrier, a surface treated carrier, a probe deposition area after the  
15 deposition of a probe solution, and a probe fixed to a carrier after the deposition of a probe solution, thereby assuring a quality of a probe chip.

38. (new) A quality assurance method for a probe carrier, wherein a  
producing system according to claim 10 is employed to execute an analytical  
20 inspection on any one or all of a probe in a probe solution prior to the deposition onto a carrier, a surface treated carrier, a probe deposition area after the deposition of a probe solution, and a probe fixed to a carrier after the deposition of a probe solution, thereby assuring a quality of a probe chip.

39. (new) A quality assurance method according to claim 1, wherein the probe chip is a probe carrier produced by a

(a) a step of designing plural kinds of probes for detecting a target substance;

5 (b) a step of synthesizing the designed plural probes;

(c) a step of individually purifying the synthesized plural probes;

(d) a step of obtaining probe information on each purified probe;

(e) a step of judging "good" or "not good" state of synthesis and purification in each purified probe according to the obtained probe information and a predetermined criterion;

10 (f) a step of repeating the foregoing steps (b) to (e) on the purified probe of which state of synthesis and purification is judged as "not good", thereby obtaining "good" state of synthesis and purification in all the purified probes;

15 (g) a step of individually dissolving each purified probe judged as "good" in a solvent for ejection to a carrier, based on at least a part of the probe information obtained in (d), in a predetermined concentration and storing each obtained probe solution in an individual storing container;

(h) a step of transferring each probe solution stored in the storing container to another container equipped in an apparatus for deposition onto the carrier;

20 (i) a step of applying a surface treatment for fixing the probe to the carrier;

(j) a step of depositing the probe solution onto a treated surface of the carrier by a method including following steps, thereby forming a plurality of mutually independent probe fixation areas;

(j-1) a step of executing an analytical inspection on the carrier for judging “good” or “not good” state of the carrier according to the result of the analytical inspection and a predetermined criterion;

(j-2) a step of depositing at least one selected from plural probe solutions onto the carrier judged as “good” so as to form a probe deposition area independent for each probe solution;

(j-3) a step of executing an inspection, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed, and judging “good” or “not good” state of the deposition according the result of the inspection and a predetermined criterion;

(j-4) a step of executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier;

(j-5) a step of executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier; and

(j-6) a step of judging “good” or “not good” state of the produced probe carrier according to the result of the analytical inspection and a predetermined criterion.

40. (new) A quality assurance method according to claim 12, wherein the probe chip is a probe carrier wherein the probe is a nucleic acid.

41. (new) A quality assurance method according to claim 12, wherein the  
5 probe chip is a probe carrier wherein the probe information is a weight of said probe.

42. (new) A quality assurance method according to claim 12, wherein the probe chips a probe carrier produced wherein the probe information is purity of  
10 said probe.

43. (new) A quality assurance method according to claim 12, wherein the probe chip is a probe carrier wherein the probe information is base sequence information of a nucleic acid.

15 44. (new) A quality assurance method according to claim 12, wherein the probe chip is a probe carrier wherein a fixation of the probe to the carrier is executed by a covalent bonding.

20 45. (new) A quality assurance method according to claim 12, wherein the probe chip is a probe carrier wherein means for spotting the probe is an apparatus equipped with single or plural ink jet nozzles.

46. (new) A quality assurance method according to claim 11,  
25 wherein the probe chip is a probe carrier comprising:

an analysis apparatus for obtaining the probe information of each purified probe;

an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe;

5 an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as "good";

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging "good" or "not good" state, concerning  
10 a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

an apparatus for executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

15 an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

47. (new) A quality assurance method according to claim 11, wherein  
20 the probe chip is a probe carrier produced by a producing system comprising:

a synthesis apparatus for synthesizing plural designed probes;

a purification apparatus for individually purifying the synthesized plural probes;

an analysis apparatus for obtaining the probe information of each purified  
25 probe;

an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe;

an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged  
5 as “good”;

an analysis apparatus for the carrier subjected to said surface treatment;

an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed;

10 an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and

an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the  
15 carrier.

48. (new) A probe carrier produced by a producing method according to claim 2.

20 49. (new) A probe carrier produced by a producing method according to claim 3.

50. (new) A probe carrier produced by a producing method according to claim 4.

25

51. (new) A probe carrier produced by a producing method according to claim 5.

5 52. (new) A probe carrier produced by a producing method according to claim 6.

53. (new) A probe carrier produced by a producing method according to claim 7.

10 54. (new) A probe carrier produced by a producing method according to claim 8.

55. (new) A probe carrier produced by a producing system according to claim 9.

15 56. (new) A probe carrier produced by a producing system according to claim 10.